



## ABSTRACT

A system for use during a medical or surgical procedure on a body. The system generates an image representing the position of one or more body elements during the procedure using scans generated by a scanner prior or during the procedure. The image data set has reference points for each of the body elements, the reference points of a particular body element having a fixed spatial relation to the particular body element. The system includes an apparatus for identifying, during the procedure, the relative position of each of the reference points of each of the body elements to be displayed. The system also includes a processor for modifying the image data set according to the identified relative position of each of the reference points during the procedure, as identified by the identifying apparatus, said processor generating a displaced image data set representing the position of the body elements during the procedure. The system also includes a display utilizing the displaced image data set generated by the processor, illustrating the relative position of the body elements during the procedure. Methods relating to the system are also disclosed. Also disclosed are devices for use with a surgical navigation system having a sensor array which is in communication with the device to identify its position. The device may be a reference frame for attachment of a body part of the patient, such as a cranial reference arc frame for attachment to the head or a spine reference arc frame for attachment to the spine. The device may also be a localization frame for positioning an instrument relative to a body part, such as a localization biopsy guide frame for positioning a biopsy needle, a localization drill guide assembly for positioning a drill bit, a localization drill yoke assembly for positioning a drill, or a ventriculostomy probe for positioning a catheter.

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